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(19) **United States**(12) **Patent Application Publication**  
**Ohmura et al.**(10) **Pub. No.: US 2002/0103583 A1**(43) **Pub. Date: Aug. 1, 2002**(54) **SYSTEM AND METHOD FOR REMOTE  
VEHICLE TROUBLESHOOTING**(76) **Inventors: Hiroshi Ohmura, Aki-Gun (JP); Koji  
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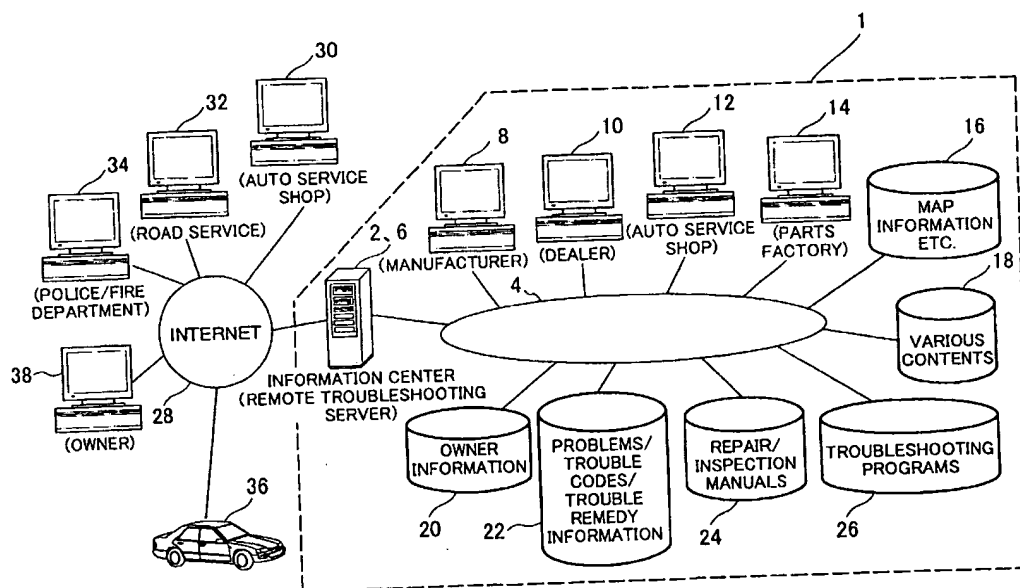
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(21) **Appl. No.: 10/058,190**(22) **Filed: Jan. 29, 2002**(30) **Foreign Application Priority Data**

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**Publication Classification**(51) **Int. Cl.<sup>7</sup> ..... G06F 19/00**(52) **U.S. Cl. .... 701/33; 701/29; 340/438**(57) **ABSTRACT**

A system for remotely performing troubleshooting of vehicles via a network using a server is disclosed. The server is equipped with a first database for storing owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, a second database for storing model-specific information including model-specific information on vehicle problems and a third database for storing a troubleshooting program for performing vehicle troubleshooting, a device for transmitting the troubleshooting program over a network to vehicles of owners regarding whom owner information is stored in the first database. The vehicles are equipped with a device for requesting the server to supply a troubleshooting program, a device for receiving the troubleshooting program, a device for using the received troubleshooting program to inspect the vehicle and obtain inspection results. The system enables vehicle troubleshooting and inspection to be performed simply without need for the vehicle owner to visit a dealer and/or auto service shop.



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ABSTRACT:

A system for remotely performing troubleshooting of vehicles via a network using a server is disclosed. The server is equipped with a first database for storing owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, a second database for storing model-specific information including model-specific information on vehicle problems and a third database for storing a troubleshooting program for performing vehicle troubleshooting, a device for transmitting the troubleshooting program over a network to vehicles of owners regarding whom owner information is stored in the first database. The vehicles are equipped with a device for requesting the server to supply a troubleshooting program, a device for receiving the troubleshooting program, a device for using the received troubleshooting program to inspect the vehicle and obtain inspection results. The system enables vehicle troubleshooting and inspection to be performed simply without need for the vehicle owner to visit a dealer and/or auto service shop.

----- KWIC -----

Current US Classification, US Secondary Class/Subclass - CCSR (2):

701/29

Summary of Invention Paragraph - BSTX (16):

[0014] The server for remote vehicle troubleshooting according to the first aspect of the invention, which performs vehicle troubleshooting from a remote location, comprises, in one configuration thereof, a first database for storing owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, a second database for storing model-specific information including model-specific information on vehicle problems, a trouble code receiver for receiving trouble codes indicating troubles from vehicles regarding which information is stored in the first database, and a trouble determining device for determining trouble particulars based on the received trouble codes and the model-specific information.

Summary of Invention Paragraph - BSTX (17):

[0015] The server for remote vehicle troubleshooting according to the first aspect of the invention, which performs vehicle troubleshooting from a remote location, comprises, in another configuration thereof, a first database for storing owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, a second database for storing model-specific information including model-specific information on vehicle problems, a vehicle data receiver for receiving predetermined vehicle data from vehicles regarding which information is stored in the first database, and a trouble determining device for determining trouble particulars based on the received vehicle data and the model-specific information.

Summary of Invention Paragraph - BSTX (18):

[0016] The server for remote vehicle troubleshooting according to the first aspect of the invention, which performs vehicle troubleshooting from a remote location, comprises, in another configuration thereof, a first database for storing owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, a second database for storing model-specific information including model-specific information on vehicle problems, a third database for storing a troubleshooting program for performing vehicle troubleshooting, and a troubleshooting program transmitter for transmitting the troubleshooting program over a network to vehicles of owners regarding whom owner information is stored in the first database.

Summary of Invention Paragraph - BSTX (19):

[0017] The remote vehicle troubleshooting method according to the second aspect of the invention, which performs vehicle troubleshooting from a remote location, comprises, in one configuration thereof, the steps of preparing owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, and model-specific information including model-specific information on vehicle problems, receiving a trouble code indicating a trouble from an owner vehicle, and determining trouble particulars based on the received trouble code and the model-specific information.

Summary of Invention Paragraph - BSTX (20):

[0018] The remote vehicle troubleshooting method according to the second aspect of the invention, which performs vehicle troubleshooting from a remote location, comprises, in another configuration thereof, the steps of preparing owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, and model-specific information including model-specific information on vehicle problems, receiving predetermined vehicle data from an owner vehicle, and determining trouble particulars based on the received vehicle data and the model-specific information.

Summary of Invention Paragraph - BSTX (21):

[0019] The remote vehicle troubleshooting method according to the second aspect of the invention, which performs vehicle troubleshooting from a remote location, comprises, in another configuration thereof, the steps of preparing owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, model-specific information including model-specific information on vehicle problems and a troubleshooting program for performing vehicle troubleshooting, and transmitting the troubleshooting program over a network to an owner vehicle.

Summary of Invention Paragraph - BSTX (22):

[0020] The remote vehicle troubleshooting program according to the third aspect of the invention, which controls a computer of a server so as to perform

vehicle troubleshooting from a remote location, comprises, in one configuration thereof, instructions for acquiring owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, and model-specific information including model-specific information on vehicle problems, instructions for receiving a trouble code indicating a trouble from an owner vehicle, and instructions for determining trouble particulars based on the received trouble code and the model-specific information.

Summary of Invention Paragraph - BSTX (23):

[0021] The remote vehicle troubleshooting program according to the third aspect of the invention, which controls a computer of a server so as to perform vehicle troubleshooting from a remote location, comprises, in another configuration thereof, instructions for acquiring owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, and model-specific information including model-specific information on vehicle problems, instructions for receiving predetermined vehicle data from an owner vehicle, and instructions for determine trouble particulars based on the received vehicle data and the model-specific information.

Summary of Invention Paragraph - BSTX (24):

[0022] The remote vehicle troubleshooting program according to the third aspect of the invention, which controls a computer of a server so as to perform vehicle troubleshooting from a remote location, comprises, in another configuration thereof, instructions for acquiring owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, model-specific information including model-specific information on vehicle problems and a troubleshooting program for performing vehicle troubleshooting, and instructions for transmitting the troubleshooting program over a network to vehicles owner.

Summary of Invention Paragraph - BSTX (28):

[0026] The remote vehicle troubleshooting system according to the fifth aspect of the invention performs vehicle troubleshooting remotely using a server, wherein, in one configuration thereof, the server is equipped with a first database for storing owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, a second database for storing model-specific information including model-specific information on vehicle problems, a trouble code receiver for receiving trouble codes indicating troubles from vehicles regarding which information is stored in the first database, and a trouble determining device for determining trouble particulars based on the received trouble codes and the model-specific information, and the vehicles are equipped with a trouble code transmitter for transmitting trouble codes indicating troubles to the server.

Summary of Invention Paragraph - BSTX (29):

[0027] The remote vehicle troubleshooting system according to the fifth aspect of the invention performs vehicle troubleshooting remotely using a server, wherein, in another configuration thereof, the server is equipped with a first database for storing owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, a second database for storing model-specific information including model-specific information on vehicle problems, a vehicle data receiver for receiving predetermined vehicle data from vehicles regarding which information is stored in the first database, and a trouble determining device for determining trouble particulars based on the received vehicle data and the model-specific information, and the vehicles are equipped with a vehicle data transmitter for transmitting predetermined vehicle data indicating troubles to the server.

Summary of Invention Paragraph - BSTX (30):

[0028] The remote vehicle troubleshooting system according to the fifth aspect of the invention performs vehicle troubleshooting remotely using a server, wherein, in another configuration thereof, the server is equipped with a first database for storing owner information including personal data regarding individual owners and vehicle data regarding vehicles owned by the owners, a second database for storing model-specific information including model-specific information on vehicle problems and a third database for storing a troubleshooting program for performing vehicle troubleshooting, a troubleshooting program transmitter for transmitting the troubleshooting program over a network to vehicles of owners regarding whom owner information is stored in the first database, and the vehicles are equipped with a requesting device for requesting the server to supply the troubleshooting program, a troubleshooting program receiver for receiving the troubleshooting program, an inspecting device for using the received troubleshooting program to inspect the vehicle and obtain inspection results.

Brief Description of Drawings Paragraph - DRTX (3):

[0031] FIG. 1 is a basic configuration diagram showing a remote vehicle troubleshooting system according to an embodiment of the present invention;

Brief Description of Drawings Paragraph - DRTX (4):

[0032] FIG. 2 is an overall configuration diagram showing an onboard computer used in an embodiment the present invention;

Detail Description Paragraph - DETX (3):

[0049] FIG. 1 is a basic configuration diagram showing a remote vehicle troubleshooting system according to an embodiment of the present invention.